WHAT IS CLAIMED IS:

1. A method for digitizing data, comprising:

    setting an element of an electronic ink display to one of a plurality of display states;

    modifying the display state of the element by writing to the display with an external device; and

    reading the element to determine if the display state has been modified .

2. The method of claim 1, wherein the external device comprises a hand held charged device.

3. The method of claim 1, wherein reading the element to determine if the display state has been modified comprises detecting an electrical property related to the display state of the element.

4. The method of claim 1, wherein reading the element to determine if the display state has been modified comprises measuring the electrical current required to reset the element to a predetermined display state.

5. The method of claim 3, wherein the electrical property comprises an impedance.

6. The method of claim 3, wherein the electrical property comprises a capacitance.

7.   The method of claim 3 wherein the electrical property comprises an electrical current.

8.   The method of claim 3, wherein the electrical property is detected, at least in part, by application of a probe signal.

9.   The method of claim 1, wherein reading the element to determine if the display state has been modified comprises measuring the current required to reset the element to a display state stored for the element in memory.

10.   The method of claim 1, wherein reading the element to determine if the display state has been modified comprises measuring the current required to set the element to a display state that represents the inverse of a display state stored for the element in a memory followed by resetting the element to a display state stored for the element in the memory.

11.   The method of claim 1 wherein the display state of the element is sustained in a power down or power off mode of the electronic ink display after the element has been set.

12.   The method of claim 1 wherein reading the element to determine if the display state has been modified comprises referring to one or more models.

13. The method of claim 1, wherein reading the element to determine if the display state has been modified is performed using a grid that is also used in setting the element.

14. A method of digitizing data, comprising:

setting an element of a display comprised of bistable display elements to one of a plurality of predetermined display states wherein the display state of the element persists in a power down or power off mode of the display after the element has been set;

modifying the display state of the display element with an external device; and

reading the display element to detect the display state.

15. The method of claim 14 further comprising updating a display memory with the display state.

16. The method of claim 14 further comprising determining whether the display state has been modified by the external device.

17. The method of claim 14 wherein reading the element of the display to obtain a display state comprises resetting the element to a predetermined reset state and measuring the current required to perform the reset operation.

18. The method of claim 14, wherein reading the element of the display to obtain a display state is performed on a grid that is also used in setting the element.

19.   The method of claim 14, wherein reading the element of the display to obtain a display state comprises probing to detect an electrical property of the element.

20.   The method of claim 19, wherein the electrical property comprises an impedance.

21.   The method of claim 19, wherein the electrical property comprises a capacitance.

22.   The method of claim 19, wherein the electrical property is determined, at least in part, by application of a small signal alternating current to the display element.

23.   The method of claim 19 wherein the display state is determined, at least in part, by reference to a model.

24.   The method of claim 23 wherein the model accounts for variables comprising environmental variables.

25.   The method of claim 23 wherein the model accounts for variables comprising process variables.

26.   A system for digitizing data written to an electronic ink display, comprising:

        means for setting an element of the electronic ink display array to one of a plurality of predetermined display states from display data stored in memory;

means for modifying the display state of the element by writing to the electronic ink display with an external device;

means for reading the element of the electronic display array to determine the display state; and

means for writing the display state read for the element to memory.

27.   A system for digitizing data written to an electronic ink display, comprising:

an electronic ink display that includes an array of display elements in which a plurality of charged pigmented particles are suspended in a dielectric medium, the array of display elements interposed between a common electrode and a grid of addressable electrode elements;

a hand-held charged device to effect display state modifications in one or more display elements of the electronic ink display;

a memory to store display data representing display states for the display elements of the electronic ink display;

a display driver operatively connected between the memory and the grid of addressable electrode elements to set display states of at least one display element of the electronic ink display based on the display data; and

an identification and detection circuit operatively connected to the electronic ink display to determine the display state of the at least one display element of the electronic ink display.

28.   The system of claim 27, wherein the identification and detection circuit is operatively connected to the grid of individually addressable electrode elements to which the display driver circuit is also operatively connected.

29.   The system of claim 27 wherein the identification and detection circuit comprises a circuit to measure an electrical current required to perform one or more set operations by the display driver.

30.   A program comprising a storage medium tangibly embodying program instructions for digitizing data written to an electronic ink display, the program instructions including instructions operable to cause at least one programmable processor to:

    set an element of the electronic ink display array to one of a plurality of persistent display states based on display data in memory;

    wait in a power down or power off mode of operation for a signal to initiate a read operation;

    read the element to determine the display state; and

    store data for the display state read in the memory.

31.   The program of claim 30 wherein the read operation comprises detecting an electrical property related to the display element.

32.   The program of claim 30 wherein the read operation comprises measuring the electrical current required to reset the element to a predetermined display state.

33.   The program of claim 30 wherein the read operation comprises measuring the current required to reset the element to a display state stored for the element in memory.

34.   The program of claim 30 wherein the read operation comprises measuring the current required to set the element to a display state that represents the inverse of a display state stored for the element in memory followed by resetting the element to the display state stored for the element in the memory.